

Case No. 16-2010

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**UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT**

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**KNOWLES ELECTRONICS, LLC,**  
*Appellant,*

v.

**CIRRUS LOGIC, INC.  
CIRRUS LOGIC INTERNATIONAL (UK) LTD.,**  
*Appellees.*

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Appeal from the United States Patent and Trademark Office, Patent Trial  
and Appeal Board, in No. 2015-004342.

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**APPELLANT KNOWLES ELECTRONICS, LLC'S  
REPLY BRIEF**

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Richard L. Rainey  
Brian G. Bieluch  
Michael S. Sawyer  
Cyril Djoukeng  
COVINGTON & BURLING LLP  
One CityCenter, 850 Tenth St. NW  
Washington, DC 20001-4956  
Tel: (202) 662-6000

*Attorneys for Appellant Knowles  
Electronics, LLC*

March 20, 2017

## CERTIFICATE OF INTEREST

Counsel for Appellant Knowles Electronics, LLC, certify the following:

1. The full name of every party or amicus represented by me is:

Knowles Electronics, LLC

2. The name of the real party in interest, if the party named in the caption is not the real party in interest, represented by me is:

Knowles Electronics, LLC

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

Knowles Electronics, LLC is a privately held company that is owned, through intermediate entities, by Knowles Corporation, which is a publicly held company traded on the New York Stock Exchange under ticker symbol KN. Franklin Resources, Inc., a publicly held company traded on the New York Stock Exchange under ticker symbol BEN, owns 10% or more of the stock of Knowles Corporation. Janus Capital Management LLC is a privately held company that owns 10% or more of the stock in Knowles Corporation. The 2016 Form 10-K of Janus Capital Group Inc., a publicly held company traded on the New York Stock Exchange under ticker symbol JNS, lists Janus Capital Management LLC as a wholly-owned subsidiary. Shapiro Capital Management LLC is a privately held company that owns 10% or more of the stock in Knowles Corporation. BlackRock, Inc., a publicly held company traded on the New York Stock Exchange under ticker symbol BLK, owns 10% or more of the stock of Knowles Corporation. No other publicly held company owns 10% or more of the stock of Knowles Electronics, LLC or Knowles Corporation.

4. The names of all law firms and the partners or associates that

appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

William Cramer of Conley Rose, PC (formerly of Lathrop & Gage LLP and Dykema Gossett PLLC); Steven McMahon Zeller of Dykema Gossett PLLC, Timothy K. Sendek of Lathrop & Gage LLP (formerly of Dykema Gossett PLLC) and Jonathan Giroux of Greenberg Traurig LLP (formerly of Dykema Gossett PLLC).

Date: March 20, 2017

/s/ Michael S. Sawyer

Richard L. Rainey

Brian G. Bieluch

Michael S. Sawyer

Cyril Djoukeng

COVINGTON & BURLING LLP

850 Tenth Street, NW

Washington, DC 20001-4956

(202) 662-6000

*Attorneys for Appellant*

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## **PRELIMINARY STATEMENT**

For claims 1–4, the Board erred in rejecting what it acknowledged may be the “most commonly accepted” definition of “package,” Appx22, by skipping over this Court’s prior analysis in *MEMS Technology*, the intrinsic evidence, and the vast weight of extrinsic evidence. The Board instead focused on identifying the bare minimum requirements that “packages *necessarily* must possess” based solely on two extrinsic sources. Appx19–21. Indeed, the Board surmised that a package “need not even possess any second-level connection at all.” Appx22 n.7.

Cirrus does not seek to defend that last position—for good reason. Reviewing the *intrinsic* record, the whole point of the invention is to create a package for a microelectromechanical *microphone*, with the microphone package having “solder pads 31 for *electrical connection* to an end user’s board,” so that the package can “be *mounted*” on an end user’s board. Appx251 (3:3–16, 4:2–4) (emphases added). The inventor is not creating a microphone package that is to be connected to *nothing*, *i.e.*, one without “any second-level connection at all.” Appx22 n.7. That would be a non-functional brick.

This Court already got this right once before. After reviewing the intrinsic evidence, the Court held in *MEMS Technology* that “a ‘package’ is a *self-contained unit* that has *two levels of connection*” because “the *essence* of the invention claimed in the ’231 patent is the containment of the components in a ‘package,’” *i.e.* the “requirement that the components listed in the claim body come together to form a *mountable* package.” Appx2716, Appx2726 (emphases added). Despite *MEMS Technology* having been before the Patent Office throughout the reexamination, the Board never engaged with its analysis. At base, Cirrus says little more regarding *MEMS Technology* than the Board’s own *ipse dixit* statement that it “has fully considered” *MEMS Technology*. Red Br. 45 (quoting Appx22).

The heart of the error lies in Cirrus’s contention that “all parties agree[]” that “extrinsic evidence” is “the best definitional source.” Red Br. 33. All parties do not agree. The Board and Cirrus have committed a basic claim construction error by jumping immediately to extrinsic evidence, picking the two perceived “broadest” statements regarding a “package” even where they do not address the issue of whether a mountable, second-level connection is required. Considering the relevant intrinsic background and properly considering the extrinsic evidence, the correct claim

construction requires a second-level connection with a mounting mechanism, *i.e.*, through-hole or surface mount. Halteren’s long flexible assembly provides neither, as the Board would find on remand.

For claims 23–27, Cirrus advances an improper and waived claim construction. According to Cirrus, the claim language “‘configured to’ is narrower than ‘capable of.’” Red Br. 53 (internal citations omitted). But the Patent Office expressly held that “configured to . . . in its broadest sense is synonymous with suitable or capable.” Appx3850. Cirrus never appealed that construction at any level and thus cannot now advance a forfeited claim construction. In any event, Cirrus makes a critical admission that “an ordinary artisan may have understood that the *disclosed* solder pads *could be used* in a reflow process.” Red Br. 20 (emphasis added). There is no record basis for concluding otherwise. The Board’s written description holding must be reversed.

Regarding the participation of the Cirrus Entities before the Board and this Court, *see Bl. Br. 75-79*, Cirrus must demonstrate its statutory eligibility to participate in proceedings *both* before the Board *and* this Court. Cirrus has essentially conceded that Cirrus Logic, Inc. (“Cirrus Inc.”) is an improper party. Red Br. 63–64. Regarding Cirrus Logic International (UK)

Ltd. (“Cirrus UK”), the Cirrus Entities cite to numerous extra-record and foreign documents that are not a proper subject of the appeal nor judicial notice. Bl. Br. 78. The Court should require the PTO to follow the statute as written and remand.

## REPLY ARGUMENT

### **I. For Claims 1–4, Cirrus Fails to Rebut that the Board Erred in its Claim Construction and Validity Analysis.**

#### **A. The Board’s Approach Improperly Rejected the “[M]ost [C]ommonly [A]ccepted” Definition of “Package.”**

There are a number of red flags in the Board’s claim construction analysis for “package.” Perhaps most telling is the Board’s acknowledgement that Knowles’s proposed construction “might . . . even constitute the most commonly accepted definition.” Appx22. And yet the Board rejects that construction. Despite this error being the focus of Knowles’s brief, Bl. Br. 44–47, Cirrus’s sole response is to quote this “Court’s guidance that the BRI ‘must be *consistent* with the one that those skilled in the art would reach.’” Red Br. 40 (quoting *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999)). That argument is perplexing because the Board rejected evidence of what “skilled artisans *usually, or at least commonly,* understand.” Appx19.

In any event, “the proper BRI construction is not just the broadest construction, but rather the broadest *reasonable* construction *in light of the specification.*” *In re Man Mach. Interface Techs. LLC*, 822 F.3d 1282, 1287 (Fed. Cir. 2016). Because the “broadest reasonable interpretation does not mean the broadest possible interpretation,” claim meaning “must be consistent with the use of the claim term in the specification and drawings.” MPEP § 2111.<sup>1</sup>

This, however, is a case where the Board looked entirely to a subset of *extrinsic* evidence through an overbroad lens. Cirrus’s brief continues to press the error made below, arguing that “extrinsic evidence” is “*the best definitional source.*” Red Br. 33 (emphasis added). The Board compounded that error by using extrinsic evidence to identify only those elements “packages *necessarily* must possess.” Appx19. But Cirrus cites no precedent that sanctions whittling down a BRI construction to only the “necessar[y]” elements. To the contrary, *Cortright* expressly cautions that “the PTO’s interpretation of claim terms should not be so broad that it conflicts with the meaning given to identical terms in” analogous prior art. 165 F.3d at

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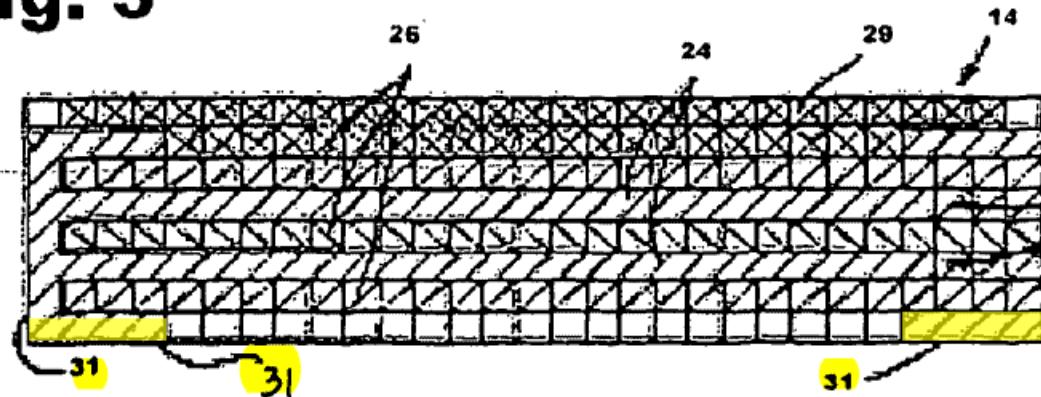
<sup>1</sup> See *In re Kaghan*, 387 F.2d 398, 401 (C.C.P.A. 1967) (reversing where the PTO did not act within “its own published procedures” in the MPEP).

1358. The Board below made this precise error by adopting a construction of “package” so broad that it conflicted with five packaging treatises. *See* Bl. Br. 50–52.

**B. Correctly Applying BRI, the Intrinsic and Extrinsic Evidence Compel Knowles’s Construction.**

Knowles’s opening brief sets forth at length extensive intrinsic evidence making explicit that the inventor sought to build a mountable package for a MEMS microphone that could form a second-level connection. Bl. Br. 48–49. In seeking his patent in the early 2000s, the inventor operated at a time when the historical, large electret condenser microphone was the incumbent technology used in cellular phones and other devices. *See id.* at 13. The inventor explains that, in “[t]he present invention,” he is building a “microelectromechanical system (MEMS) package[]” such that “this part would typically be *mounted* of FR-4 which is the same material used by end users.” Appx251 (3:3–8) (emphasis added). The inventor then attaches to the substrate of his package “solder pads 31 for electrical connection to an end user’s board,” Appx251 (4:3–4), as shown in Figure 3 of the ’231 Patent:

**Fig. 3**



Appx249 (highlighting added).

This Court's prior conclusion, in reading the same patent, remains entirely correct: the "essence of the invention" is the "requirement that the components listed in the claim body come together to form a *mountable package*," Appx2716 (citing '231 patent 1:8–12, 36–41; 3:3–4; 4:40–43; 5:2–5) (emphasis added), comprising "a self-contained unit that has two levels of connection, to the device and to a circuit (or other system)," Appx2726. Far from building, as the Board surmised, a microphone package that is to be connected to *nothing*, i.e., one without "any second-level connection at all," Appx22 n.7, the inventor makes plain that he is seeking to build a mountable package to form a second-level connection.

Tellingly, Cirrus appears to offer no response on the merits to the intrinsic evidence Knowles cited. See Bl. Br. 48–49. Cirrus's only response

appears to be that because “the specification ‘does not offer a concise dictionary definition’ of ‘package,’” Red Br. 32 (quoting Appx4152), intrinsic evidence does not matter. Not so.

The whole point of claim construction is to determine the “broadest reasonable construction *in light of the specification.*” *Man Mach.*, 822 F.3d at 1287. Intrinsic evidence is not *ignored* when the specification lacks “a concise dictionary definition.” Red Br. 32 (quoting Appx4152).<sup>2</sup> Cirrus and the Board critically err in declining to engage with the intrinsic background, which compels Knowles’s construction that the inventor’s package be *mountable* to form a second-level connection.

The extrinsic evidence further makes overwhelmingly certain that Knowles’s construction is correct. There does not appear to be any serious dispute that five treatises, repeated in full in Knowles’s brief, *see Bl. Br. 50–52*, make explicit that packages provide a mounting mechanism, either through-hole or surface mount. Cirrus itself characterizes these references as evidencing that packages “*commonly* [include] a second-level

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<sup>2</sup> Cirrus states, without record citation, that “all parties agreed” that “extrinsic evidence was the best definitional source,” Red Br. 33 n.4, but Knowles has never agreed that intrinsic background is irrelevant, *e.g.*, Appx3370–3372, Appx4155–4156, Appx5158, Appx5165–5167.

interconnection via through-hole or surface mounting," Red Br. 35 (emphasis added), while failing to provide any contemporaneous evidence of a single uncommon package lacking a mountable second-level connection.

Oddly, both the Board and Cirrus seek to begin and end their analysis by looking at two extrinsic statements that are consistent with the foregoing, but do not address, one way or the other, whether the inventor was addressing a mountable package that would form a second-level connection. Interestingly, one treatise foreshadows this very problem with picking a partial definition of the term "package": "Packages range in complexity from what is really a 'nonpackage' such as chip-on-board (although this package does at least partially satisfy the definition), which might have a dozen pressure bonded interconnect pads . . . to a fully hermetic" package. Appx3480. This is essentially the problem of this case, with Cirrus attempting to press a partial definition of "package" in order to utilize a chip-on-flex reference.

The main argument pressed by the Board and Cirrus for ignoring the above five treatises is that a subset say "'in general,' 'basic,' and 'major.'" Red Br. 35. Ergo, Cirrus reasons, rather than this subset of definitions

suggesting two overarching categories, these definitions must be suggesting that there are other, unstated types of packages that are unmounted. That is, according to Cirrus, a treatise stating that there are two “major” or “basic” categories of animals (vertebrates and invertebrates) means that there must be animals that fall outside those two categories. Unable to direct the Court to valid evidence, however, of packages without mountable second-level connections, Cirrus proceeds into a series of abstractions.

*First*, Cirrus turns to the example in Knowles’s opening brief in which Knowles notes that the Board’s approach would turn a motorcycle into a car, Bl. Br. 58, and provides actual evidence that there have been cars with “strange wheel configurations,” such as three- or six-wheeled cars. Red Br. 36 & n.7. This proffer simply highlights Cirrus’s failure to identify even a single contemporaneous example of a “strange” package that lacks a mountable second-level connection, in contrast to the extensive evidence showing that “[a]ll the available packages are classified” as either “Through Hole Package[s]” or “Surface Mount Package[s].” Appx2847-2848; *see also* Bl. Br. 51-52 (similar).

In any event, Cirrus misses the point of the motorcycle example, which shows why the Board's approach of eliminating all requirements except for what a "package" "*necessarily* must possess," divorced from the intrinsic background, results in an unreasonably broad construction. Bl. Br. 58 (quoting Appx19). Cirrus appears to concede that even the BRI of "car" should not encompass motorcycles. *See* Red Br. 36–37. Indeed, even the "strange wheel configurations" webpage relied upon by Cirrus states that a "one-wheeled" vehicle is "[n]ot a car."<sup>3</sup>

Cirrus's main strategy for escaping basic analysis of intrinsic and extrinsic evidence has been to use a genus-species framework, in an effort to remove any meaning from the term "package," with Cirrus arguing that the "plain and ordinary meaning of the genus 'package' must be broad enough to includes [sic] all its species, not just the 'ordinary' ones." Red Br. 37 (citing no precedent). Of course, this Court has already rejected Cirrus's view that the BRI must include every species without regard to intrinsic

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<sup>3</sup> Chris Chilton, *The CAR Top 10: strange wheel configurations*, CAR Magazine (Feb. 9, 2015), <http://www.carmagazine.co.uk/features/top-10s/the-car-top-10-strange-wheel-configurations/>.

evidence.<sup>4</sup> Invoking genus-species case law is no panacea for skipping basic analysis of the intrinsic and extrinsic evidence, particularly where there is no species of unmountable packages, let alone reason to think the inventor intended such a package.

*Second*, Cirrus argues that there was “other extrinsic evidence before the Board” that the Board could have attempted to use. Red Br. 34 n.5, 37–38, 41 nn.9–10, 48 (citing declarations from Dr. Pecht and Dr. Tummala, as well as other extrinsic evidence). This argument is irrelevant, as Cirrus must defend “the grounds upon which the Board *actually relied*.” *In re Applied Materials, Inc.*, 692 F.3d 1289, 1294 (Fed. Cir. 2012) (citing *Sec. & Exch. Comm'n v. Chenery Corp.*, 332 U.S. 194, 196 (1947)) (emphasis added). Because “the Board did not rely on” those declarations, this Court should “not address in the first instance [their] meaning and legal significance.” *In re Varma*, 816 F.3d 1352, 1365 (Fed. Cir. 2016). In any event, the Board was correct not to rely on such litigation-inspired evidence, where these

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<sup>4</sup> For example, this Court reversed the Board’s construction of “hydrocarbon” as too broad for including both gases and liquids – although, unlike here, the specification “describe[d] hydrocarbons as gases and liquids” – because “[n]one of the embodiments of the invention described in the written description relate to gaseous hydrocarbons.” *In re Baker Hughes Inc.*, 215 F.3d 1297, 1302–03 (Fed. Cir. 2000).

declarations contradict contemporaneous treatises authored by the declarants. *See* Bl. Br. 51–52; Appx2842, Appx2845, Appx2847–2848.

Likewise, with regard to Knowles having noted that the Board erred in looking solely at the Harper Dictionary’s definition of “package” while ignoring its definition of “assembly” as a “microelectronics device *prior to packaging*” Appx642 (emphasis added), *see* Bl. Br. 57–58, Cirrus once again requests findings nowhere made by the Board, *see* Red Br. 47–48. Cirrus argues that Dr. Tummala uses “the term ‘assembly’ to describe a package,” Red. Br. 48 (quoting Appx792), and therefore both terms must be synonymous. Cirrus seeks to equate the terms, because the chip-on-flex prior art reference at issue, Halteren, repeatedly describes itself as being an “assembly,” as opposed to a “package.” Bl. Br. 16–18. Of course, Dr. Tummala’s self-serving litigation statement says nothing about what the terms “package” and “assembly” mean in the *Harper Dictionary* relied upon by the Board, which itself distinguishes between an unpackaged assembly and a packaged device.

*Third*, Cirrus attempts to muddy the water, seeming to argue that the Court need not reach *any* claim construction if the Board were correct in rejecting Knowles’s construction. Red Br. 38. The argument is irrelevant,

because the intrinsic and extrinsic evidence compels Knowles's construction. The reason Cirrus avoids focusing on the Board's actual claim construction holdings, however, is that they are unclear, at best. The Board's opinion plainly surmised that perhaps a "package" "need not even possess any second-level connection at all." Appx22 n.7; *see also* Appx21 (similar statements, discussed below). Cirrus deals with this by stating: "The Board reached no such conclusion." Red Br. 30.

The Board's repeated statements suggesting that "packages" do not require second-level connections are tough for Cirrus to confront, as they are plainly wrong and contrary to *MEMS Technology*. *See* Appx2726. But in any event, the fact that the Board's affirmative claim construction positions in this matter are unclear is, itself, reason to remand. *See Gechter v. Davidson*, 116 F.3d 1454, 1460 (Fed. Cir. 1997) (claim construction must "be explicit"); *In re NTP, Inc.*, 654 F.3d 1279, 1287–1291 (Fed. Cir. 2011) (vacating where "the Board's construction . . . is incorrect").

Likewise, the Board surmises that a "package" need only have "any electro-mechanical connection means." Appx22. Cirrus stays almost entirely silent on this view, simply quoting it once. Red Br. 38. The Board's view is based upon the two extrinsic definitions selected by the Board.

Knowles ends its claim construction analysis where the Board and Cirrus would prefer it to begin—with those two extrinsic definitions. As summarized in Knowles’s brief, *see* Bl. Br. 55–57, the JEDEC definition, as interpreted by the Board, would be broad enough to encompass a cardboard box. The Board’s reliance on such an overbroad interpretation, however, demonstrates the danger in skipping the traditional claim construction analysis required by this Court and the MPEP.

Despite Cirrus’s contention that “[t]he Board reached no such conclusion” regarding a second-level connection not being required for a “package,” Red Br. 30, the Board concludes: the JEDEC “definition provides evidence that a package need not even necessarily include any second-level connection at all.” Appx21. That analysis is flawed. The reference to “electrical connection” does not address, one way or the other, whether a package requires electrical connection to the enclosed item (a first-level connection), the outside world (a second-level connection), or both. All other evidence makes explicit that a package requires both.

The Board additionally plucks out a sentence in the Harper Dictionary stating that a “package” would include, *inter alia*, “[a]n enclosure or housing used to contain any level of electronic system or

subsystem.” Appx21. And once again, despite Cirrus’s effort to argue otherwise, *see Red Br. 30*, the Board again explicitly states: this “definition . . . does not even require that the package possess second-level connections,” Appx21 (emphasis added).

While the Board is wrong to surmise that a “package” can lack a second-level connection, the Board’s statements—that both extrinsic statements it has selected do not require second-level connections—make its selection of the claim construction it picked all the more puzzling. The Board’s ultimate conclusion is that a “package” may be “connected to an external component . . . by any electro-mechanical connection means.” Appx22. That conclusion finds no support in the Board’s own analysis of the two extrinsic statements it plucked to advance its position.

The Board’s failure to apply the BRI standard in accordance with this Court’s and the MPEP’s guidance, unexplained departure from the “usual[]” and “common[]” understanding of “package” (Appx19), and failure to properly analyze the intrinsic and extrinsic evidence require reversal and remand.

### **C. The Board Must Explain its Departure from MEMS Technology, Pursuant to *Power Integrations*.**

As Knowles has noted, Bl. Br. 59–61, when previously confronted with a situation where the Board declined to substantively engage with a judicial holding that was central to a party’s claim construction, this Court held that the Board has an “obligation” to evaluate a previous judicial interpretation of disputed claims “and to determine whether it [is] consistent with the broadest reasonable construction of the term.” *Power Integrations v. Lee*, 797 F.3d 1318, 1327 (Fed. Cir. 2015). The Board and the Examiner were presented with *MEMS Technology* throughout the proceedings below.<sup>5</sup> Indeed, Knowles went further and specifically pressed *Power Integrations* as soon as that decision was reached: “*Power Integrations* supports Knowles’ contention that the Examiner must address and apply

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<sup>5</sup> Knowles repeatedly urged the consideration of *MEMS Technology*. See, e.g., Appx2693–2733; Appx2806–2807 & n.4 (“incorporat[ing] by reference: the Federal Circuit opinion” in response to Halteren); Appx3892 (Federal Circuit addresses “the same term in the same patent”) (italics added); Appx5173 (repeating *MEMS Technology* holding); Appx5178 (prior art reference is “‘not a unit with components that come together to form a mountable package’”) (quoting *MEMS Technology*); Appx6825 (construction of the word ‘package’ . . . has already been done . . . in a case called MemsTech”); Appx6827 (“the requirement that the components listed in the claim body come together to form a mountable package is an important characteristic of the claimed invention”).

*MEMS Technology's interpretation of the claim term 'package' . . ."* Appx6794–6796. Knowles additionally sought rehearing on the *MEMS Technology* and *Power Integrations* error, pressing this point at length. Appx6910–6911.

The Board heard Knowles, but would not substantively engage with *MEMS Technology*. The Board's Decision held instead that it was "unpersuaded by Owner's argument that we should give deference to the narrow interpretation of 'package' that the Federal Circuit adopted." Appx22. Specifically, the Board contended that it had "fully considered the Circuit Court's claim constructions," but was not bound simply because of the BRI standard, *id.*, without explaining *what MEMS Technology* gets wrong. On rehearing, the Board stated once again, without engaging substantively, that it was declining to follow *MEMS Technology* in essence because "the USPTO is not bound in reexamination proceedings by claim constructions produced by a court." Appx35.

Cirrus offers four unavailing responses. *First*, Cirrus provides the *ipse dixit* assertion that *MEMS Technology* "fully supports the Board's decision." Red Br. 41. It does not. Cirrus's assertion is premised upon Cirrus having sought to imply, *see* Red Br. 30, that the Board expressly agreed with

*MEMS Technology* that “a ‘package’ is a self-contained unit that has *two levels of connection,*” Appx2726 (emphasis added). That argument is debunked *supra.*

*Second*, Cirrus argues that what this Court recognized as an “important characteristic of the claimed invention,” *i.e.*, “the requirement that the components listed in the claim body come together to form a mountable package,” Appx2716 (internal citations omitted), is a mere “passing reference.” Red Br. 42. Knowles fundamentally disagrees that statements about the “essence of the invention” from the “Claim Construction” portion of the opinion are passing dicta. *See* Appx2706–2716.

*Third*, Cirrus states that *MEMS Technology* “did not limit [the second-level connection] to being achieved via through-hole mounting or surface mounting.” Red Br. 41. While *MEMS Technology* never addressed through-hole and surface mounting, the opinion plainly recognized that the inventor sought to create a “mountable package,” Appx2716, after extensively examining the intrinsic evidence, *see supra* at 7. Cirrus points to no other type of mountable package. Yet the Board declined to recognize the same or explain why mounting to form a second-level connection is not required.

*Finally*, Cirrus argues that Knowles did not “even ostensibly request[] adoption of the interpretation of ‘package’ in *MEMS Technology* “until the hearing.” Red Br. 44. Cirrus separately concedes, however, that Knowles pressed *MEMS Technology* in arguing that a package must have two levels of connection. *Id.* Cirrus’s waiver argument was neither made by the Board nor pressed by Cirrus at any point below. It is thus not a basis for the Board’s decision. *Applied Materials, Inc.*, 692 F.3d at 1294; see *Mankes v. Vivid Seats Ltd.*, 822 F.3d 1302, 1309 (Fed. Cir. 2016) (a party’s “waiver argument amount[ed] to a new argument on appeal”). To the contrary, as noted *supra* n.5, Knowles repeatedly urged the Board to consider *MEMS Technology*, and cited *Power Integrations* at the first opportunity. The Board expressly cites both cases and Knowles’s arguments in its Decision and Rehearing Decision. The Board should either adopt a construction that accords with the analysis in *MEMS Technology* or substantively explain why it disagrees.

**D. The Board’s Halteren Determination Must be Set Aside And/Or Remanded.**

For the reasons stated in Knowles’s opening brief and *supra*, the Court should vacate and remand with instructions to apply the proper claim construction. But even under the Board’s erroneous construction, the

Board's Halteren analysis is flawed. As Knowles has noted, Halteren "has no second-level connection for electrical and mechanical connection, as it instead uses exposed conductors as 'contact pads that provide required electrical connections' to 'a connector,' Appx7305 (7:28–36), and is not mountable, as it uses another 'piece of electronic equipment' for 'holding the assembly,' *id.* (8:42–45)." Bl. Br. 63.

Cirrus asserts, in opposition, that "Halteren's contact pads convey the microphone signals and power supply voltages from conductors 20-23 to the next level of interconnection—the external equipment (*e.g.*, mobile phones or hearing instruments)—that holds the assembly and fixes its position." Red Br. 46. At the outset, Cirrus notably does not cite the Board's decision, which is the reasoning—or lack thereof—that is before the Court.

Should the Court nonetheless consider Cirrus's independent arguments, they still require reversal. Cirrus appears to argue that contact pads for a connector can provide a second-level connection for electrical and mechanical connection. *Id.* at 47. Cirrus's arguments are unavailing. Halteren's cable-like unpackaged assembly discloses a flexible substrate to be wound through "hearing instruments," Red Br. 46, and is thus fundamentally different from the inventor's "package" for mounting to a

printed circuit board to form a second-level connection. Halteren expressly teaches the opposite of Cirrus's proposed modification—another "piece of electronic equipment" is responsible for "holding the assembly," Appx7305 (7:28–36, 8:42–45), because the "total length of the flexible member 40 is, preferably, within range from 15 to 100mm." *See id.* at 8:19–21. Indeed, the Halteren *assembly* cannot provide the mechanical connection because Cirrus admits that the "*external equipment . . . holds the assembly and fixes its position.*" Red Br. 46 (emphasis added).

Lastly, Cirrus makes a waiver argument, contending that "Knowles . . . argues for the first time that Halteren does not disclose a package because it allegedly lacks any mounting mechanism or mechanical second-level connection." Red Br. 45 (quotation marks omitted). Once again, Cirrus over-reaches. Knowles specifically argued before the Board that a package must be "*mechanically and electrically connected to a printed circuit board by either through-hole or surface mounting,*" and, "[i]n contrast, the [Halteren] assembly is intended to be plugged into a connector on some other piece of equipment." Appx5170 (emphasis added); *see also* Appx3372–3373 (Halteren "does not disclose any mechanism for securing end portion 45"). That remains precisely the point. "Since nothing in [Halteren] suggests that

its exposed contact pads were intended to be (or even could be) inserted into plated through-holes in a printed circuit board or soldered to lands on a printed circuit board, and since in fact [Halteren] expressly discloses a different mechanism, [Halteren] does not disclose the required ‘package.’” Appx5170.

The Board’s anticipation finding should be reversed.

## **II. For Claims 23 to 27, the Board’s Written Description Analysis Requires Reversal.**

Cirrus makes a critical admission that “an ordinary artisan may have understood that the *disclosed* solder pads *could be used* in a reflow process.” Red Br. 20 (emphasis added). This admission makes explicit that, under *Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co.*, 598 F.3d 1336 (Fed. Cir. 2010), *see* Bl. Br. 63–74, the written description requirement is satisfied.

### **A. Cirrus’s Argument Relies Upon a New, Improper Claim Construction for “Configured.”**

Cirrus’s entire defense of the Board’s written description analysis rests upon an erroneous construction of the phrase “configured to” that fundamentally conflicts with the record. Specifically, Cirrus newly contends “that ‘configured to’ is narrower than ‘capable of.’” Red Br. 53 (quoting *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1349

(Fed. Cir. 2012)). But Cirrus cites nothing in the record, let alone in the Board’s decision, adopting such a construction.

To the contrary, the Examiner specifically construed “configured to . . . in its broadest sense [as] *synonymous with suitable or capable.*” Appx3850 (emphasis added). The Board utilized the same construction, analyzing whether the disclosed solder pads are “*capable* of connection to a printed circuit board using a solder reflow process.” Appx13 (emphasis added). The PTO’s construction of “configured to” was, of course, done under the BRI standard, as opposed to the construction in *Aspex*.

Throughout Cirrus’s argument, *see Red Br. 50–59*, Cirrus declines to apply the PTO’s construction that the solder pads at issue merely be “capable” or “suitable” for solder reflow: “Whether an ordinary artisan would have understood that the disclosed solder pads *could have* been used [i.e., were capable of being used] in a solder reflow process says nothing about whether the applicants possessed solder pads configured for that purpose . . .” Red Br. 51. This argument was not advanced to the Board, conflicts with the PTO’s actual construction under the BRI standard, and was not the basis for the Board’s decision. It is therefore forfeited and entitled to no weight. *In re Watts*, 354 F.3d 1362, 1368 (Fed. Cir. 2004).

**B. Cirrus’s Brief Makes Explicit that the Written Description Requirement is Satisfied.**

In any event, the written description requirement is satisfied. Under *Ariad*, “the disclosure . . . [must] reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad*, 598 F.3d at 1351; *see Bl. Br. 63–64*. Cirrus concedes that “an ordinary artisan may have understood that the *disclosed* solder pads *could be used* in a reflow process.” Red Br. 20 (emphasis added). Little dispute remains in light of that concession.

The written description makes explicit that the inventor was attempting to build a package for a MEMS microphone die that could be surface mounted to a user’s printed circuit board. *See Bl. Br. 68–70*. And the record is replete with evidence showing that surface mounting is accomplished with the common mass-manufacturing procedure of reflow soldering to a board. *Bl. Br. 66–68*.

At the outset, Cirrus does not appear to challenge two major errors in the Board’s analysis, which alone warrant remanding. *See Bl. Br. 65–74*. *First*, Cirrus offers no defense for the Board’s view that its task was not to address “what would have been *understood objectively* by one of ordinary

skill.’’ Bl. Br. 65 (quoting Appx15). Cirrus concedes that the appropriate question for written description is whether the specification ‘‘reasonably conveys to those skilled in the art that the inventor had possession.’’ Red Br. 51 (quoting *Ariad*, 598 F.3d at 1351).

*Second*, Cirrus never disputes that the numerous treatises Knowles submitted make explicit that (a) solder pads on the bottom of a package disclose an intention to ‘‘surface mount[] the device,’’ Bl. Br. 66 (quoting Appx5159 and citing other treatises), and (b) surface mounting is principally done using solder reflow, Bl. Br. 10–11, 66–68 (citing numerous treatises and prior art patents). Cirrus appears to concede the point, acknowledging that ‘‘an ordinary artisan may have understood that the disclosed solder pads could be used in a reflow process.’’ Red Br. 20 (emphasis added).

Cirrus’s primary written description arguments are predicated upon aggressive characterizations of the Board’s positions and another effort to shoehorn solder pads on the bottom of a microelectronics package into species/genus case law. The heart of Cirrus’s argument proceeds by portraying the Board as having analyzed and rejected the intrinsic evidence regarding, according to Cirrus, the ‘‘disclosure of solder pads *on the lower*

*surface of the package.”* Red Br. 54 (emphasis added). Cirrus’s brief must, however, be parsed very closely on this point.

Specifically, in characterizing the Board’s ruling, Cirrus adds “on the lower surface of a package” to the Board’s holding. What the Board actually found is that Knowles “does not contend that . . . all solder pad materials must be capable of being connected using a solder reflow method.” Appx13 (citing Appx5198–5201). Cirrus’s insertion of “on the lower surface of a package” is significant, because Knowles pressed this point at length – treatises are explicit on its meaning, as explained below – and the Board misapprehended it. Knowles had asked the Board to recognize that a skilled artisan would understand that the *disclosed* “‘solder pads,’ *that were located on the bottom of the substrate* of an electronics ‘package’ and *were expressly intended to be used to attach the substrate of the package* to ‘an end user’s board,’ could use the well-known surface mount process of ‘solder reflow.’” Appx5200–5201 (emphasis added). The Board missed this point regarding the significance of an inventor calling for solder pads on the undersurface of a microelectronics package.

The contemporaneous packaging treatises before the Board make explicit what the inventor was referencing. The treatises teach, for example,

that “‘solder balls on the underside of the package’ are used ‘to mount and reflow to a printed circuit motherboard.’” Bl. Br. 66 (quoting Appx1345–1346) (emphasis added).

Rather than addressing “what the location of the solder pads on the package and their intended use ‘reasonably conveys’ to a skilled artisan,” Bl. Br. 74 (citing App5199–5201, Appx6914–6915), the Board concluded that the disclosure of solder pads in the specification is not an “inherent” disclosure of solders pads “capable of connection to a printed circuit board using a solder reflow process,” Appx13, ignoring the doctrine that a “patent need not teach, and preferably omits, what is well known in the art,” *Streck, Inc. v. Research & Diagnostic Sys., Inc.*, 665 F.3d 1269, 1288 (Fed. Cir. 2012) (citations omitted); *see* Bl. Br. 64–65 (collecting cases). Thus, this case is fundamentally like *Pozen Inc. v. Par Pharmaceutical, Inc.*, 696 F.3d 1151, 1166–67 (Fed. Cir. 2012), where written description rejections were limited to claims that recite “new or unpredictable concepts,” not elements “routinely” practiced in a field. It is indisputable that solder reflow was routinely practiced in packaging at the time of Minervini’s invention.

In sum, the written description requirement is satisfied and there is no basis for concluding that under-mounted solder pads are “incapable” of solder reflow.

### C. Cirrus’s Remaining Written Description Arguments Are Unavailing.

Cirrus argues that the Board “correctly found that the specification ‘merely discloses a genus – solder pads that are capable of being connect [sic] to a board,’ but “‘fails completely to disclose the newly claimed species of such pads – pads that are connectable to a board specifically by using a solder reflow process.’” Red Br. 59 (quoting Appx14). This argument is a red herring.

The question before the Court is whether “the disclosure . . . reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad*, 598 F.3d at 1351. As discussed *supra*, the Board specifically and erroneously declined to follow *Ariad*. The existence of other “species” of solder pads that may be capable of use with a different type of soldering is ultimately irrelevant to whether the disclosed solder pads on the underside of the

package would be, as understood by a person of ordinary skill, capable of solder reflow.

But in any event, the Board’s misapplication of the genus-species rubric here is made explicit by Circuit precedent. It is because a skilled artisan would readily understand that the specification teaches a “routine[]” or principal method for connection to a user’s board, *Pozen*, 696 F.3d at 1166, that the specification, in fact, discloses a specific “tree,” and the existence of other remote possibilities of connections does not create a vast “forest” full of unclaimed “trees.” Tellingly, Cirrus does not dispute that, at most, a person of ordinary skill would understand that there are only a “handful of soldering types.” Bl. Br. 71. The inventor’s teachings satisfy the written description requirement.

Cirrus’s two remaining arguments are unavailing. First, Cirrus makes a file history argument, asserting that “Knowles argued that the language ‘configured to . . . us[e] a solder reflow process’ distinguished the claims over prior art with solder pads on the lower surface of the package.” Red Br. 54 (quoting Appx13). The ellipsis in Cirrus’s quotation is highly misleading, as it omits the very claim language that Knowles used to distinguish the prior art. The relevant quotation comes from a Knowles

Response filed during the reexamination regarding rejections over Hietanen. Appx3395–3398. As Knowles explained, Hietanen fails to anticipate Claim 1 because it “discloses an unpackaged MEMS microphone,” which “is not enclosed within a package housing.”

Appx3396. “[T]here is no package because there is no ‘enclosure for a device or circuit,’ but rather, the only enclosure is the wireless communication device case itself . . .” *Id.*

Likewise, with respect to a rejection of Claims 23 to 26 over a combination of Hietanen and Yamamura, where the examiner relied on Yamamura for the solder pad requirement of those claims, Appx3397, Knowles responded that Hietanen “does not disclose all of the elements of Claim 1, and the Examiner’s proposed addition of [Yamamura] does not cure that deficiency.” *Id.* As Knowles explained, adding “BGA solder pads from Yamamura . . . to Hietanen . . . would result only in a *circuit board* with solder pads on its lower surface, not a *package* with solder pads on its lower surface.” *Id.* (emphasis added). Thus, Knowles addressed the difference between a circuit board (which does not require an enclosure) and a package (which requires an enclosure), not whether the BGA solder pads from Yamamura were capable of solder reflow.

Lastly, Cirrus argues that “Knowles could not seek to overcome the prior art” even if the written description requirement is met. Red Br. 53. That argument is not properly before the Court because the Board expressly declined to consider whether Claims 23–27 were anticipated by Halteren. Appx23–24.

In any event, the argument is incorrect. There is a glaring difference between the '231 package and the Halteren assembly: there are *solder pads* on the '231 package, directly underneath the MEMS package, Appx251 (4:2–4), Figure 3, whereas the *contact pads* in Halteren are at the distal end of a long flexible substrate connector, Appx7305 (7:28–36). Thus, whereas the '231 solder pads enable the package to “be mounted” to the user’s board, thereby forming a mechanical connection, Appx251 (3:3–8), the contact pads in Halteren form no such connection. Instead, as Halteren expressly states, another other “piece of electronic equipment” is responsible for “holding the assembly.” Appx7305 (7:28–36, 8:42–45)

### **III. The Record Does Not Establish that the Cirrus Entities are Proper Parties, Requiring Vacatur and/or Remand.**

For *both* proceedings before the Board *and* this Court, Congress has provided that the only other “party” to such appeal proceedings shall be

the “third party requester.” 35 U.S.C. § 315(b) (2010). The “third party requester” is defined as the “person *requesting . . . inter partes reexamination under section 311.*” 35 U.S.C. § 100(e) (2010) (emphasis added); *see Bl. Br. 76.* Wolfson Microelectronics plc is the “person” who “request[ed]” reexamination here. Appx7276–7277.

The Cirrus Entities argue that they filed two notices below indicating that they are “[r]eal [p]art[ies]-in-[i]nterest.” Red Br. 65. While the Patent Act requires in Section 311(b) that the requester indicate “the identity of the real part[ies] in interest,” 35 U.S.C. § 311(b) (2010), a statutory real party-in-interest is distinct from the statutory definition of a third-party requester. *See id.* § 100(e) (looking to the ““person requesting . . . inter partes reexamination”). Simply put, being a real-party-in-interest does not qualify one to participate in appeals before the Board and this Court.

At the outset, Cirrus Inc. is plainly not a proper party and even offers to “remov[e] itself.” Red. Br. 64.

Regarding Cirrus UK, aside from noting that Cirrus UK was identified as a real party-in-interest (Red Br. 65), Cirrus does not dispute that there is no *record* evidence establishing Cirrus UK’s relationship to Wolfson PLC. Red Br. 62–63 (citing extra-record materials submitted to this

Court). Pursuant to Federal Circuit Rule 27(e), Knowles hereby moves to strike all references to such extra-record materials in Cirrus's brief and argument. Given that the parties have already briefed this issue at the motions stage and given that the Court has directed that the issue may be addressed in merits briefing, *see* Dkt. 33, Knowles further moves to strike the corresponding materials Cirrus has submitted into the appendix (Appx22584-22697).

As set out in Knowles's opening brief, the statutory eligibility issue before the Court is not an Article III issue and is thus not one for which an appellate court may receive new evidence. Bl. Br. 78 (collecting citations). Nor are such materials a proper subject of judicial notice, as they relate to U.K. legal materials and the issue of whether a "re-registration" under the U.K. Company Act of 2006 qualifies a new entity to stand in the place of a prior entity. Red Br. 62; Bl. Br. 78. Additionally, Cirrus still has not provided any asset transfer agreement relating to Wolfson, which would show the relationship between these entities. *Agilent Techs. v. Waters Techs. Corp.*, 811 F.3d 1326, 1333 (Fed. Cir. 2016).

With regard to Cirrus's waiver argument (Red Br. 60-61), the argument misses the mark. The Patent Act requires the Cirrus Entities to

demonstrate that they are the third party requester for purposes of *both* appeals – before this Court and below. 35 U.S.C. § 315(b) (2010). Knowles moved at the outset of this appeal for the record to be remanded, Dkt. 23; there is no waiver. With respect to proceedings below, Cirrus agrees that Knowles expressly challenged Cirrus’s participation at the first possible opportunity, when Cirrus attempted to participate in oral argument. Red Br. 60. Cirrus argues that Knowles should have repeated its objection, *see* Red Br. 61, but Cirrus’s portrayal of the record skips over the Board’s actual ruling that Knowles was not entitled to oppose and “if Requesters attend the oral hearing, . . . it will up [sic] to the discretion of the panel if they would like to *sua sponte* ask Requesters any questions that they may have with regard to . . . the Notice of Change in real party-in-interest.” Bl. Br. 77 (quoting Appx14440.) Knowles pressed its objection at length, *see* Appx14411–14412, and was rejected. No more is required.

Knowles respectfully submits that this Court’s role, as an appellate court reviewing an administrative record, is to require the PTO to follow the statute as written and remand the record for a finding as to whom constitutes the third party requester entitled to participate.

## CONCLUSION

For the foregoing reasons, the Court should vacate and remand.

Respectfully submitted,

/s/ Michael S. Sawyer

Richard Rainey

Brian Bieluch

Michael S. Sawyer

Cyril Djoukeng

COVINGTON & BURLING LLP

850 Tenth Street, NW

Washington, DC 20001-4956

(202) 662-6000

*Attorneys for Appellant Knowles  
Electronics, LLC*

## **Proof of Service**

I hereby certify that on March 20, 2017, the foregoing APPELLANT KNOWLES ELECTRONICS, LLC'S REPLY BRIEF was filed with the Clerk of the Court for the United States Court of Appeals for the Federal Circuit using the appellate CM/ECF system which pursuant to Federal Rule of Appellate Procedure 25(c)(2) and Federal Circuit Rule 25(e)(1) constitutes service on all parties represented by attorneys who have registered for the CM/ECF system.

Dated: March 20, 2017

By: /s/Michael S. Sawyer

Michael S. Sawyer

**Certificate of Compliance  
with Type-Volume Limitation, Typeface Requirements,  
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The undersigned hereby certifies that this brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 28.1(e)(2)(B)(i). The brief contains 6,985 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b).

The undersigned also hereby certifies that this brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6). The brief has been prepared in a proportionally spaced typeface using Microsoft Office Word 2010 in 14-point Book Antiqua type style, with 14-point or larger Book Antiqua type style headings.

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